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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/574,779 | 04/06/2006 | Kikuo Maeda | 070456-0109 | 2527 |

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| EXAMINER | |
|---|---|
| YANG, JIE | |
| ART UNIT | PAPER NUMBER |
| 1793 | |
| MAIL DATE | DELIVERY MODE |
| 07/10/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/574,779 | MAEDA ET AL. | |
| | Examiner | Art Unit | |
| | JIE YANG | 1793 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) *11,12 and 17-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/26/2007;4/6/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election of "Group I—Claims 1-10 and 13-16 drawn to a process method of "a thin component" in the reply filed on 05/12/2008 is acknowledged without traverse (MPEP 818.03(a)).

Claims 11-12 and 17-19 are withdrawn from consideration as being directed to a non-elected group and claims 1-10 and 13-16 are pending for examination.

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim1-8 and 10, are rejected under 35 U.S.C. 102(b) as being anticipated by Japan patent publication 09-296214, thereafter JP'214 (With machine translation document).

Regarding claims 1-8 and 10, JP'214 teaches a method for solid forming austempering treatment, capable of performing quenching at sufficient cooling velocity without causing distortion even in the case of a relatively thick material (Abstract of JP'214), which reads on the manufacturing of a thin component as recited in the instant claim. JP'214 teaches molding-heat-processing (Abstract, Paragraph [0013], Fig.3-5 of JP'214), quenching while holding the material to treated between

forming dies, and treating the material under the temperature of isothermal transformation region (Abstract and Paragraph [0016] of JP'214), which reads on the heating, sizing, quenching and isothermal transformation processes as recited in the instant claim 1. JP'214 teaches mold forming, which reads on limitation of sizing the thin component with mold as recited in the instant claim 2. JP'214 teaches quenching while holding the material to treated between forming dies, which reads on the quenching said thin component using said mold as quenching media as recited in the instant claims 3-5, and 8. JP'214 teaches treating the material under the temperature of isothermal transformation region, which reads on the tempered using said molds as temperature control media as recited in the instant claim 6. The quenching and tempering processes of JP'214 read on the mold are used in both of said steps of quenching and tempering as recited in the instant claim 7.

Regarding claim 10, JP'214 teaching using carbon steel S70C (carbon is about 0.72wt%), which reads on the limitation of steel containing carbon by at least 0.4 mss% as recited in the instant claim.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9 and 13-16, are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'214 in view of Grell et al (US 6,682,227 B2, thereafter, US'227).

Regarding claims 9 and 14, JP'214 teaching the heating process (Abstract, Fig.3, and [0013] of JP'214), which generally covers the induction heating process. This position is further evidenced by US'227. US'227 teaches a method for manufacturing rolling bearing component (Title, Abstract of US'227). US'227 teaches heat-treating the component by inductive heating (Col.2, lines 9-17 of US'277). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention made to select the well-known induction heating technique as disclosed by US'277 (Col.2, lines 9-18) in the JP'214 heating process with the expected success.

Regarding claims 13-16, rolling bearing ring is one of thin component as claimed in the instant claim 1. JP'214 does not

specify the rolling bearing ring application. However, JP'214 teaches the same molding-heat, quenching, tempering processing on the similar carbon steel as recited in the instant invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply this method on rolling bearing ring because JP'214 teaches the component could be hardened without causing distortion (Abstract of JP'214). This position is further evidenced by US'227. US'227 teaches using carbon steel with carbon from 0.3-0.55 wt% (claim 3 and Table of US'227) for rolling bearing component application Title, Abstract of US'227).

Still regarding claim 13, which includes similar process steps as recited in the instant claim 1, refer to the rejection for the claim 1, claim 13 would be obvious over JP'214 in view of US'227.

Still regarding claim 15, JP'214 teaching using carbon steel S70C (carbon is about 0.72wt%), which reads on the limitation of steel containing carbon by at least 0.4 mss% as recited in the instant claim.

Still regarding claim 16, the pressing pressure is recognized as a result-effective variable in term of the mold pressing result, which depends on materials, heat temperature,

and dimension of working piece. JP'214 teaches the same molding-heat, quenching, tempering processing on the similar carbon steel as recited in the instant invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the pressing pressure, for example at least 2.94 $N/cm^2$ as claimed in the instant claim in order to obtain the desired working pieces.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-2701884. The examiner can normally be reached on IFP.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JY
/Roy King/
Supervisory Patent Examiner, Art Unit 1793